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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/801,370	03/16/2004	Takeo Suzuki	9281-4757	3151

7590 07/28/2006

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EXAMINER

VO, NGUYEN THANH

ART UNIT	PAPER NUMBER
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2618

DATE MAILED: 07/28/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

<p align="center">Office Action Summary</p>	<p>Application No.</p> <p>10/801,370</p>	<p>Applicant(s)</p> <p>SUZUKI ET AL.</p>	
	<p>Examiner</p> <p>Nguyen T. Vo</p>	<p>Art Unit</p> <p>2618</p>	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-8 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-4, 7 and 8 is/are rejected.
- 7) ☒ Claim(s) 5 and 6 is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 16 March 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. ____. |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date ____. | 6) <input type="checkbox"/> Other: ____. |

DETAILED ACTION

Claim Objections

1. Claim 8 is objected to because of the following informalities: the recitation "quatratue" on page 12 line 25 should be changed to --quadrature--; the recitation "pluralaity" on page 12 line 25 should be changed to --plurality--. Appropriate correction is required.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.
3. Claim 7 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

As to claim 7, the recitation "the digitizer" on page 12 line 19 lacks clear antecedent basis.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein

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were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

6. Claims 1-4, 7-8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kivekas (US 2003/0003891, cited by examiner) in view of Hostetter (4,866,395, cited by examiner).

As to claim 1, Kivekas discloses a direct conversion circuit (see paragraph [0047]) comprising first and second mixers 40, 50 to which radio frequency signals are input (see the input RF signals received at antenna 1), said radio frequency signals being obtained from a single signal input (see the output of amplifier 3); an oscillator 6 for supplying the first and second mixers with local oscillation signals whose phases are orthogonal to each other (see phase shifter 7); a baseband processing circuit 10 for processing baseband signals output from the first and second mixers; and a level-difference correcting circuit 9, the level-difference correcting circuit adjusting the two baseband signals input to the baseband processing circuit so that levels of both baseband signals are equal to each other by changing relative levels of the radio frequency signal input to the first mixer and the radio frequency signal input to the second mixer (see paragraph [0052]). Kivekas thus discloses all the claimed limitations except that the level-difference correcting circuit 9 is in a stage before the first and second mixers, as recited in the claim. Hostetter discloses level-difference correcting

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circuit 16 (see figure 2) adjusting the two baseband signals input to the baseband processing circuit so that levels of both baseband signals are equal to each other by changing relative levels of the radio frequency signal input to the first mixer and the radio frequency signal input to the second mixer (see column 3 lines 8-40; column 5 line 46 to column 6 line 42, wherein the level-difference correcting circuit 16 is in a stage before the first and second mixers 26A, 26B (see figure 2). Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to provide the above teaching of Hostetter to Kivekas, in order to lock the demodulator to proper phase and amplitude of the modulated carrier (as suggested by Hostetter at column 3 lines 4-7).

As to claims 2, 4, the combination of Kivekas and Hostetter discloses the claimed limitations (see Kivekas, paragraph [0052]).

As to claim 3, the combination of Kivekas and Hostetter discloses the claimed limitations (see Kivekas, paragraphs [0030], [0052]).

As to claims 7-8, they are rejected for the same reasons as set forth in claim 1 above. In addition, Kivekas further discloses low pass filtering (see the low pass filters 41 and 51), digitizing the low pass filtered signals (see A/D converters 43 and 53).

Allowable Subject Matter

7. Claims 5-6 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

As to claims 5-6, the applied references fail to disclose or render obvious the details of the level-difference correcting circuit as specified in the claims.

Conclusion

8. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Ozluturk (US 2004/0162104); Dapper (5,878,089); Birleson (6,714,776) and Zamat (6,314,278) disclose correcting gain imbalance in receivers.

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Nguyen T. Vo whose telephone number is (571) 272-7901. The examiner can normally be reached on Monday-Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Edward Urban can be reached on (571)272-7899. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Nguyen Vo

Nguyen Vo
7/21/2006

NGUYENT.VO
PRIMARY EXAMINER